

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph of the specification beginning at page 1, line 11, and continuing to page 1, line 14, as follows:

The present ~~invention~~^{technology} relates to an attaching structural unit used for installing a quadrangular solar-battery module onto a slanted roof, and a solar-battery structural unit. It also relates to a ~~method of~~ attaching or removing method ~~for~~ a solar-battery structural unit.

Please amend the paragraph of the specification beginning at page 2, line 15, and continuing to page 2, line 23, as follows:

The frame member 110 is provided with a front frame portion 111 and a rear frame portion 112 that are attached along the front and rear ends of the solar-battery module M as well as a left frame portion 113 and a right frame portion 114 that are attached along the left and right ends of the solar-battery module M. These frame portions 111, 112, 113 and 114 are respectively fitted to peripheral edge portions of the solar-battery module M with screws 115. ~~Here, b~~ Buffer members are ~~interpolated~~^{interposed} between the front-side frame element 111 as well as the rear-side frame element 112 and the solar-battery module M.

Please amend the paragraphs of the specification beginning at page 3, line 11, and continuing to page 4, line 8, as follows:

However, such a conventional attaching structure of the solar-battery module M to a roof has the following problems:

(1) Since the conventional attaching structure of the solar-battery module M to a roof is insufficient in anti-water-leakage measures and flame resistive measures, it is not possible to directly attach the solar-battery module M to the sheathing roof board of a roof. For this reason, a roof member 120 is attached to the upper surface of the sheathing roof board to ensure the water-proof property and nonflammable property, and a base frame 121 used for securing the module unit U₁ has to be installed on the roof member 120. Consequently, a cover 125 used for securing the module unit U₁ to the base frame 121 and a number of bolts 126 are required, with the result that the attaching structure becomes complex with an increased number of parts, causing longer installation time and high costs.

(2) Upon installation, the worker might damage the roof member 120, and the adjacent frame members 110 of the solar-battery module M have to be mutually connected with earth cables, with the result that the earth wiring operation ~~needs-involves~~ time-consuming tasks and the frame members 110 might be damaged during these operations.

(3) Since the solar-battery module M is attached onto the base frame 112, the surface of the solar-battery module M is raised above the peripheral roofing tiles, causing adverse effects on the external appearance.

Please amend the caption on page 4, line 9, as follows:

BRIEF SUMMARY OF THE INVENTION

Please amend the paragraphs of the specification beginning at page 4, line 10, and continuing to page 5, line 17, as follows:

An object of the present invention is to provide The present technology provides an attaching structural unit used for installing a quadrangular solar-battery module onto a slanted roof, which is composed of a fewer number of parts, a solar-battery module unit, and an attaching or removing method for a solar-battery structural unit, which can simplify and easily carried out.

The present invention technology provides an attaching structural unit used for ~~e~~installing a quadrangular solar-battery module onto a slanted roof, comprising a module frame attached to the solar-battery module, ~~t~~. The module frame ~~comprising~~ comprises a pair of first and second elongated frame elements opposed to each other and another pair of third and fourth elongated frame elements opposed to each other, ~~wherein e~~. Each of the third and fourth frame elements respectively includes a water-leakage preventive edges protruding outward and extending longitudinally from each of the frame elements.

In another aspect, the present invention technology provides a solar-battery structural unit which is provided with a quadrangular solar-battery module and a module frame in the attaching structural unit to be attached to the solar-battery module, a securing member for securing the module frame to a beam of a roof.

In accordance with the present ~~invention~~technology, the solar-battery structural unit can be installed on a roof together with roof-forming members as a simple structural unit, and it is possible to prevent rain water leakage from a gap between the structural units and the roof-forming member in the lateral direction by a water-leakage preventive edge of the module frame.

These and other objects ~~of the present application~~ will become more readily apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

Please amend the paragraph of the specification beginning at page 5, line 19, and continuing to page 5, line 20, as follows:

Fig. 1 is a plan view that shows a solar-battery module unit in accordance with an ~~example~~ embodiment of the present invention.

Please amend the paragraphs of the specification beginning at page 6, line 7, and continuing to page 6, line 17, as follows:

Fig. 5 is a cross-sectional view that shows a front-side frame element of a module frame as an ~~example~~ embodiment of the present invention.

Fig. 6 is a cross-sectional view that shows a rear-side frame element of a module frame as an ~~example~~ embodiment of the present invention.

Fig. 7 is a cross-sectional view that shows a left-side frame element of a module frame as an example embodiment of the present invention.

Fig. 8 is a cross-sectional view that shows a right-side frame element of a module frame as an example embodiment of the present invention.

Fig. 9 is a cross-sectional view that shows a decorative cover of a module frame as an example embodiment of the present invention.

Fig. 10 is a cross-sectional view that shows a front securing tool of a securing part as an example embodiment of the present invention.

Fig. 11 is a cross-sectional view that shows a rear securing tool of a securing part as an example embodiment of the present invention.

Please amend the paragraphs of the specification beginning at page 6, line 22, and continuing to page 7, line 4, as follows:

Fig. 13 is a cross-sectional view in which module units according to present inventionan example embodiment are placed on a roof together with roofing tiles, and an essential portion of an attaching structure of the module units in the front row and the rear row of Fig. 3 is shown.

Fig. 14 is a cross-sectional view in which module units according to present invention are placed on a roof together with roofing tiles, and an essential portion of an attaching structure of the module units in the rear row on the ridge side of Fig. 3 is shown.

Please amend the paragraph of the specification beginning at page 7, line 14, and continuing to page 8, line 4, as follows:

~~In~~An attaching structural unit is used for installing a quadrangular solar-battery module onto a roof of the present invention,

comprising. The unit comprises a module frame attached to the solar-battery module, the module frame comprising a pair of first and second elongated frame elements opposed to each other and another pair of third and fourth elongated frame elements opposed to each other, wherein e. Each of the third and fourth frame elements respectively includes a water-leakage preventive edges protruding outward and extending longitudinally from each of the frame elements.

In an attaching structural unit of the present invention, wherein the first frame element is a front-side frame element placed in the direction of an eaves side of the roof, the second frame element is a rear-side frame element placed in the direction of a ridge side of the roof, the third frame element is a left-side frame element placed in the direction of a left side with respect to the roof, and the fourth frame element is a right-side frame element placed in the direction of a right side with respect to the roof.

Please amend the paragraph of the specification beginning at page 10, line 10, and continuing to page 10, line 25, as follows:

With this arrangement, the module unit is directly attached to a beam (so-called tiling lath) in the lateral direction of the sheathing roof board that forms a roof surface, without the necessity of placing a metal roof member (see Fig. 17) for use in water-leakage prevention, which has been conventionally required. Therefore, the present invention technology makes it possible to eliminate the necessity of members, such as a metal roof member for use in water-leakage prevention and a base frame used for securing the solar-battery module to the roof member; thus, it becomes possible to greatly reduce the number of parts and also

to simplify the attaching structure. Consequently, it becomes possible to carry out the installation efficiently in a short time, and also to greatly reduce installation costs.

In the present ~~invention~~^{technology}, based upon the state of a roof viewed from the eaves side, the left and right directions are defined, and the eaves side is defined as the front side and the ridge side is defined as the rear side.

Please amend the paragraph of the specification beginning at page 12, line 15, and continuing to page 12, line 18, as follows:

In the present ~~invention~~^{technology}, the front-side frame element may has a front hook on its lower surface, and the rear-side frame element may has a rear hook on its upper surface which can be engaged with the front hook in another module unit.

Please amend the paragraph of the specification beginning at page 13, line 4, and continuing to page 13, line 19, as follows:

The present ~~invention~~^{technology} may be further provided with a securing member for securing the module frame onto a beam on the roof and the rear-side frame element of the module frame is further provided with a protruding hook that protrudes forward on its lower surface. In this case, the securing member are provided with a plurality of securing metal tools, a front securing tool that can be engaged with the front hook in the front-side frame element, and a rear securing tool that can be engaged with the protruding hook in the rear-side frame element. The above-mentioned front securing tool may be provided with hole sections through which the above-mentioned securing metal tools are inserted, so

that the front securing tool is secured to the beam of the roof through the roof-forming member. The above-mentioned rear securing tool may be provided with hole sections through which the above-mentioned securing metal tools are inserted, and is placed on the beam in an engaged state with the above-mentioned protruding hook of the rear-side frame element.

Please amend the paragraph of the specification beginning at page 14, line 8, and continuing to page 14, line 10, as follows:

In the present ~~invention~~technology, the first frame element, second frame element, third frame element and fourth frame element may be divided respectively, and are connected and assembled with small screws.

Please amend the paragraphs of the specification beginning at page 14, line 16, and continuing to page 16, line 9, as follows:

In the present ~~invention~~technology, the front hook may be detachably attached to a front side of the front-side frame element by using small screws; thus, this arrangement makes it possible to easily remove these small screws and also to remove the front hook easily so that a desired module unit placed on the roof can be exchanged easily.

In the present ~~invention~~technology, the module frame may be further provided with a decorative cover that is detachably attached to the front-side frame element. With this arrangement, it is possible to provide a unified structure between the front-side frame element of the module units placed on the roof and the eaves-side ends of the peripheral roof-forming members, and also to conceal the small screws

on the front hook; thus, it becomes possible to prevent adverse effects from occurring on the external appearance.

In the present ~~invention~~technology, the module frame may be provided with a reinforcing member which is placed on the back face of the solar-battery module so as to connect the first frame element and the second frame element; thus, it becomes possible to prevent backlash in the module frames attached to the solar-battery module as well as backlash in the solar-battery module attached to the roof. Moreover, it is also possible to prevent the first frame element from being deformed by fallen snow along the roof at the time of deep snow.

In the present ~~invention~~technology, the rear securing tool may be formed to have a length shorter than the rear-side frame element. With this arrangement, it is possible to provide good air permeability between the module unit and the sheathing roof board, and also to suppress an abnormal temperature increase in the solar-battery module. Further, this arrangement allows wires of electric cables of the respective solar-battery modules to pass by the side of each rear securing tool, thereby providing easy wiring jobs.

In the present ~~invention~~technology, the module frame may be further provided with a foamed resin member that is incorporated in a gap between the module frame and the solar-battery module. This arrangement makes it possible to positively prevent rain water from entering a gap between the solar-battery module and the module frame, and consequently to positively prevent water permeation into the roof. Moreover, this foamed resin member also functions as a buffering member when the module frames are attached to the solar-battery

module so that it becomes possible to prevent damages to the solar-battery module.

The following description will discuss the module unit of the present inventiontechnology.

The module unit of the present inventiontechnology, comprising a quadrangular solar-battery module and a module frame in the attaching structural unit to be attached to the solar-battery module.

Please amend the paragraph of the specification beginning at page 16, line 23, and continuing to page 17, line 2, as follows:

The solar-battery structural unit of the present inventiontechnology comprises a quadrangular solar-battery module, a module frame to be attached to the solar-battery module to form a module unit, and a securing member used for securing the module unit on a beam on a roof.

Please amend the paragraph of the specification beginning at page 19, line 9, and continuing to page 19, line 15, as follows:

The attaching method of the module unit of ~~the present~~
inventionan example embodiment comprises the steps of securing the front securing tool to the beam of the roof from above the roof-forming member with the securing metal tools, engaging the rear securing tool with the protruding hook of the rear-side frame element, engaging the front hook of the front-side frame element with the front securing tool, and placing the rear securing tool on the beam, and securing thereon with the securing metal tools.

Please amend the paragraphs of the specification beginning at page 19, line 25, and continuing to page 21, line 1, as follows:

In the attaching method of the present ~~invention~~technology, in case where the module units are placed on a roof with a plurality of rows in the front-to-rear direction, the protruding hook of the rear-side frame element in the module unit to be located in the direction of the ridge of the roof is engaged with the rear securing tool, the front hook of the front-side frame element in the same module unit is also engaged with the rear hook of the rear-side frame element in a module unit to be adjacent to the above module unit, and the above rear securing tool is placed on the beam of the roof and secured with the securing metal tools.

The removing method for the module unit attached on the roof by using the above-mentioned attaching method ~~of the present invention~~ comprises the steps of removing the front hook of the front-side frame element in the module unit to be exchanged, pushing the module unit up toward so that at least the protruding hook of the rear-side frame element is separated from the rear securing tool, and raising the front end of the module unit on or roof-forming member adjacent to the above module unit, thereby detaching the module unit to be exchanged from the roof.

In the removing method of ~~the present invention~~an example embodiment in which the front hook is detachably attached to the front-side frame element, a module unit to be newly used is beforehand detached on its front hook, which is followed by inserting the new module unit into the position of removed module unit, engaging the protruding hook of the new module unit on the rear securing tool, re-attaching the front hook which is beforehand detached to the new

module unit, and engaging the front hook with the front securing tool or the rear hook of the adjacent module unit.

Please amend the paragraphs of the specification beginning at page 21, line 13, and continuing to page 22, line 3, as follows:

Referring to Figures, the following description discusses the present invention in detail. Here, ~~t~~The present invention is not intended to be limited by the example embodiments herein described.

Fig. 1 is a plan view that shows a module unit in accordance with an example embodiment of the present invention; Fig. 2 is a side cross-sectional view that shows the module unit of the embodiment; Fig. 3 is a side cross-sectional view that shows a state in which the module units of the embodiment are placed in the front and rear two rows on a roof; and Fig. 4 is a front cross-sectional view that shows the module unit in the embodiment. Here, ~~t~~The present embodiment relates to a case in which flat plate tiles are arranged on a roof, and in general, in most flat plate tiles, an overlaid portion (so-called overlap portion) is formed on the right side; ~~t~~Therefore, the present embodiment exemplifies flat plate tiles in which the overlaid portion is formed on the right side; ~~b~~ However, the present invention technology can be applied to flat plate tiles in which the overlaid portion is formed on the left side, in the same manner.

The present invention technology relates to the attaching structural unit used for installing the quadrangular (rectangular) solar-battery module M onto the slanted roof, the module unit U, the solar-battery structural unit, the attaching method for the solar-battery structural unit and the removing method for the module unit. As shown in Figs. 1 to 3, the attaching structural unit for the solar-battery modules is

provided with a module frame 10 that is attached to the four sides of the solar-battery module M, and a front securing tool 31 and a rear securing tool 32 used for securing the module unit U onto roof beams 3 of a sheathing roof board 2 of the roof. The module unit U is formed by attaching the module frame 10 to the solar-battery module M.

Please amend the paragraphs of the specification beginning at page 23, line 5, and continuing to page 24, line 11, as follows:

The module frame 10 is mainly constituted by comprises a pair of first and second frame elements that face each other, a pair of third and fourth frame elements that face each other and small screws that connect the respective frame portions to each other. More specifically, on the assumption that the solar-battery module M is placed on a roof, the module frame 10 is constituted by comprises a front-side frame element (first frame element) 11 that is attached to the front-side end of the solar-battery module M, a rear-side frame element (second frame element) 12 that is attached to the rear-side end of the solar-battery module M, a left-side frame element (third frame element) 13 that is attached to the left-side end of the module M, a right-side frame element (fourth frame element) 14 that is attached to the right-side end of the module M and a plurality of stainless screws that connect the respective four frame elements 11, 12, 13 and 14 to each other. Each of these frame elements 11, 12, 13 and 14 is formed into a desired cross-sectional shape by an extrusion machining process using, for example, aluminum and aluminum alloy.

The following description discusses the shape and structure of each of the frame elements of the module frame 10. As shown in Figs. 2 and

5, the front-side frame element 11 is constituted by comprises a holding portion 11a having a U-shaped in its cross section, which is formed so as to hold the front-side end of the solar-battery module M in an inserted state through a seal member 16 made from a foamed resin {for example foaming EPDM (ethylene-propylene-diene-methylene) resin}, a cernuous portion 11b, which is formed to be connected to the holding portion 11a in a manner so as to protrude downward, and has screw holes with which screws 17 are engaged at predetermined positions, a rear protruding portion 11c that is formed on the rear surface of the cernuous portion 11b so as to protrude therefrom, and has screw holes through which screws 18 are engaged at predetermined positions, and an upper-and-lower pair of locking parts 11d that are placed on the front faces of the holding portion 11a and the cernuous portion 11b.

Please amend the paragraphs of the specification beginning at page 24, line 21, and continuing to page 26, line 20, as follows:

As shown in Fig. 2 and Fig. 6, the rear-side frame element 12 is provided with a holding portion 12a having a virtually U-shaped in its cross-section, which is formed so as to hold the rear-side end of the solar-battery module M in an inserted state through a seal member 16, a hollow portion 12b which is formed on the rear face of the holding portion 12a so as to be connected thereto, and has a screw-use engaging concave section, formed therein, that is used for connecting the left-side frame element 13 and the right-side frame element 14, an attaching side portion 12c having an L-shaped in its cross-section, which is formed so as to protrude from the upper wall of the hollow portion 12b toward the ridge side, and has a screw hole through which a screw 19 is engaged at

a predetermined position, a protruding hook 12d protruding forward (eaves side), which is formed on the lower face of the hollow portion 12b, and a hook portion 12e that extends forward from the lower wall of the holding portion 12a with its tip being folded.

Moreover, a rear hook 22 is further attached to the rear-side frame element 12. This rear hook 22 is provided with an attaching portion 22a having a U-shaped in its cross-section and an engaging plate portion 22b having an L-shaped. The attaching portion 22a is formed by, for example, bending a stainless plate member, is fitted to the above-mentioned attaching side portion 12c, and which has a screw hole through which a screw 19 is inserted, in its upper wall. The engaging plate portion 22b, which protrudes forward from the front end of the upper wall of the attaching portion 22a, and the front end of the engaging plate portion 22b is slightly bent upward. The rear hook 22 is divided into a plurality of portions (see Fig. 1). In the case of the present embodiment, two rear hooks 22 are attached to the rear-side frame element 12 in its center side with a predetermined gap placed in between, and two rear hooks 22 having a length that is virtually a half length of the above-mentioned two rear hooks 22 are attached onto the two sides thereof with a predetermined gap thereto.

As shown in Fig. 4 and Fig. 7, the left-side frame element 13 is provided with a holding portion 13a having a virtually U-shaped in its cross-section, which is formed so as to hold the left-side end of the solar-battery module M in an inserted state through the seal member 16, a cernuous portion 13b that protrudes downward perpendicularly from the side wall of the holding portion 13a, and an underlaid receiving edge 13c for use in water-leakage prevention, which protrudes leftward from the

lower end of the cernuous portion 13b, and a plurality of water-draining protruding portions 13d that extend in the front-to-rear direction and a bent end portion 13e that is bent upward are placed on the upper face of the underlaid receiving edge 13c.

As shown in Fig. 4 and Fig. 8, the right-side frame element 14 is provided with a holding portion 14a having a virtually U-shaped in its cross-section, which is formed so as to hold the right-side end of the solar-battery module M in an inserted state through the seal member 16, and an overlaid edge 14b which protrudes rightward from the upper wall of the holding portion 14a, and a plurality of water-draining protruding portions 14c that extend in the front-to-rear direction are placed on the lower face of the overlaid edge 14b.

Please amend the paragraphs of the specification beginning at page 27, line 22, and continuing to page 28, line 25, as follows:

As shown in Fig. 3 and Fig. 10, show the front securing tool 31 of the securing member, which is made of, for example, a stainless plate member. The front securing tool 31 is provided with a securing plate portion 31b and an engaging portion 31c. The securing plate portion 31b is placed at a position corresponding to a nail hole on the ridge side end of the roofing tile 1, which having a hole sections 31a through which the securing metal tool 33 (wood screw, in this case) is inserted. The engaging portion 31c that is formed on the front end of the securing plate portion 31b. The front end of this engaging portion 31c is slightly bent upward. The front securing tool 31 is formed to have a length that is virtually equal to the front-side frame element 11 of the module frame 10.

At the same time, as shown in Fig. 3 and Fig. 11, show the rear securing tool 32 of the securing member, which is made of, for example, a stainless plate member. The rear securing member 32 is provided with a securing plate portion 32b and an engaging portion 32c. The securing plate portion 32b is provided with a hole section 32a through which the securing metal tool 34 (wood screw, in this case) is inserted, and that is placed on a tiling lath 3 extending in the lateral direction of the sheathing roof board 2, and that is secured on the tiling lath 3 with the securing metal tool 34 being inserted through the hole section 32a. The engaging portion 32c that is formed so as to be bent upward as well as backward from the front end of a securing plate portion 32b. On the rear surface of the end portion that is bent backward of the engaging side portion 32c, a triangular convex portion 32d is formed. Moreover, the rear end of the securing plate unit 32b is bent downward so as to be engaged by the corner portions of the tiling lath 3 in the lateral direction. The rear securing tool 32 is formed to have a length shorter than the rear-side frame element 12 of the module frame 10.

Please amend the paragraph of the specification beginning at page 29, line 16, and continuing to page 29, line 25, as follows:

The installation method of the module unit U onto the roof is described below, and referring to Fig. 3 and Fig. 4 as well as Figs. 12 to 14, the explanation will be given. Here, Fig. 12 is a cross-sectional view that shows ~~an essential~~ portion of the attaching structure on the eaves side of the module unit in the front row; Fig. 13 is a cross-sectional view that shows ~~an essential~~ portion of the attaching structure on the ridge side of the module unit in the front row and the eaves side of the module

unit in the rear row; and Fig. 14 is a cross-sectional view that shows ~~an essential~~ portion of the attaching structure on the ridge side of the module unit in the rear row.

Please amend the paragraph of the specification beginning at page 31, line 16, and continuing to page 33, line 16, as follows:

Next, the sequence proceeds to the installation of the roofing tile 1 in the third row on the eaves side and the solar-battery module M in the second row on the eaves side. In this case, with respect to the module unit U in the preceding row that has been placed, the module unit U in the succeeding row is bridged thereon. In other words, it is placed with an offset so that the front-side frame element 11 of the single module unit U in the succeeding row is supported on the respective rear-side frame elements 12 of the preceding two module units U. The attaching method of the module unit U in the succeeding row is virtually the same as the above-mentioned method;

However, in this case, the front securing tool 31 is not required. In other words, with the rear securing tool 32 being engaged with the protruding hook 12d of the rear-side frame element 12 of the module frame 10 in the succeeding row (second row on the eaves side), the front hook 21 of the front-side frame element 11 is engaged with the rear hook 22 of the module frame 10 in the preceding row so that the above-mentioned rear securing tool 32 on the succeeding row side is placed on the roof tiling lath 3 in the lateral direction and secured thereon with the securing metal tool (wood screw) 34. In this manner, a plurality of module units U are successively placed next to the roofing tile 1 on the left side, and the roofing tile 1 is placed next to the left-end module unit

U on the left side; t. Thus, the roofing tile 1 in the third row on the eaves side and the solar-battery module M in the second row on the eaves side have been placed. During these processes, the respective electric cables of the solar-battery modules M laterally adjacent to each other are series-connected in the same manner as those in the preceding row, and one of the electric cables of the solar-battery module M on the left end that has been placed lastly is directed to the inside of the house through a wiring duct, not shown, prepared in the roof. Moreover, the module frame 10 of the solar-battery module M in the succeeding row and the module frame 10 of the solar-battery module M in the preceding row are electrically connected to each other, with the front hook 21 and the rear hook 22 (or rear-side frame element 12) being made in contact with each other; t. Thus, the module frames 10 of all the module units U in the longitudinal direction as well as in the lateral direction are electrically connected to each other so that it is only necessary to connect an earth cable to only the rear-side frame element 12 of the module frame 10 on the left end on the succeeding row that has been lastly placed; t. Thus, the earth cable is drawn into the house together with the electric cable to provide earth wiring. Here, t. One of the electric cables of the solar-battery module M on the right end in the preceding row is allowed to pass by the side of the rear securing tool 32, and connected to one of the cables of the solar-battery module M on the right end in the succeeding row, with one of the electric cables of the solar-battery module M on the left end in the preceding row being allowed to pass by the side of the rear securing tool 32 and drawn into the house through the wiring duct. In the present embodiment, as shown in Fig. 3 and Fig. 14, the rear hook 22 is attached to the rear-side frame element 12 of the module frame 10

of the module unit U in the succeeding row; ~~h.~~ However, the rear hook 22 may be removed prior to the installation of the module unit U.

Please amend the paragraph of the specification beginning at page 33, line 17, and continuing to page 35, line 7, as follows:

In this manner, a plurality of module units U, each ~~constituted comprised~~ by the solar-battery module M in which the module frame 10 is attached, are laterally secured adjacent to the roofing tiles 1 on the roof with the securing members in the front and rear two rows so that a solar-battery array is formed. This solar-battery array is provided with the above-mentioned water-permeation preventive property in the lateral direction, and in the flowing direction on the roof (front-to-rear direction), the module unit U on the eaves side is placed on the module unit U on the ridge side in the same manner as the arrangement of the roofing tiles so that the water-leakage preventive property is prepared.

Moreover, with respect to the securing structure in which the solar-battery modules M are attached to the roof surface, on the eaves side of the module unit U in each of the front and rear rows, its front hook 21 is engaged with the front securing tool 31 or the rear hook 22 of the module unit U in the preceding row; ~~with t.~~ The ridge side of the module unit U in each of the front and rear rows ~~being are~~ directly secured onto the tiling lath 3 in the lateral direction with the rear securing tool 32; ~~t.~~ Thus, the solar-battery modules M are directly placed on most of the roof surface together with the roofing tiles.

Moreover, the solar-battery modules M (module units U) are directly placed on the sheathing roof board as roof members so that no base frame is required; ~~t.~~ Thus, it is possible to greatly reduce the

number of parts, to greatly shorten the installation time by cutting the attaching processes of the base frame, and consequently to reduce the installation costs.

Moreover, since no base frame is required, the level of the solar-battery module surface is maintained as low as the peripheral roofing tiles so that an integral structure with the roof members is achieved. Thus, no adverse effects are caused on the external appearance. Furthermore, the rear securing tool is made shorter than the rear-side frame element so that good air permeability is prepared; thus, it becomes possible to prevent a temperature increase in the solar-battery module M, and also to make the wiring process of the electric cables easier. Since the rear hook 22 and the front hook 21 of the module frames 10 of the front and rear adjacent solar-battery modules M are engaged with each other, the module frames 10 of the front and rear solar-battery modules M are connected to each other electrically; thus, no earth cable is required between the module frames 10.

Moreover, by preparing the film placed on the face opposite to the light-receiving face as a back film 10a containing a metal foil (for example, steel sheet), a flame-proof structure is formed so that the units are allowed to serve as a roof material having a flame-proof property.

Please amend the paragraph of the specification beginning at page 36, line 16, and continuing to page 36, line 21, as follows:

In this manner, in accordance with the removing and exchanging method of the module unit U of the present invention, the detaching process of the module unit U to be exchanged and the attaching process of the new module unit U can be carried out by simply removing and

TANAKA
Serial No. 10/769,791

Atty Dkt: 900-491
Art Unit: 1753

attaching the screw 17 and the front hook 21; thus, it becomes possible to complete the exchanging processes easily in a short period of time.